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ceæ are separated from the Coniferæ as a distinct order, including Torreya, with one species, *T. californica*, and Taxus, represented by *T. brevifolia*. The Coniferæ, proper, include eleven genera and thirty-four species. Of the latter, at least, sixteen exceed one hundred feet in height, and no less than eleven of these reach or exceed the height of two hundred feet. The Abietineæ are described by Dr. Engelmann, and the arrangement is consequently the most recent. Instead of the old genus Abies, as we all learned it in Gray's Manual, we have Abies, Pseudotsuga, Tsuga, and Picea. Under Pinus there are fourteen species.

In the Monocotyledons, the Orchidaceæ are not numerous. This is, however, not the case with the Liliaceæ, represented by thirty-one genera. Many of the genera are rich in species, *e. g.*, Allium with twenty-three; Brodiæa with fourteen; Lilium with eight; Fritillaria, eight; Calochortus, twenty-one. Three palms are described as occurring in the southern part of the State, viz: *Washingtonia filifera*, *Erythea edulis* and *E. armata*. The sedges and grasses, the latter by Dr. Thurber, occupy more than one hundred pages of the volume. Nearly one hundred more pages are filled with descriptions of the vascular Acrogens (by Prof. Eaton), and the cellular Acrogens (Musci and Sphagnaceæ only). Fifty pages of "additions and corrections," mostly to Vol. I, an excellent index, a glossary, and a "List of persons who have made botanical collections in California," by Prof. Brewer, complete this volume. The authors (Brewer, Watson and Gray, for Vol. I, and Watson, for Vol. II) are to be congratulated upon the successful completion of this great work, and the liberal-handed business men of the Golden State are to be commended for their public spirit in furnishing the means for its publication after the Legislature had refused to do so. No other State is now provided with so excellent a work upon its native plants.—*C. E. B.*

BALBIANI'S LECTURES ON THE GENERATION OF VERTEBRATES.[1]—This work corresponds in some degree to that of Kölliker on the development of man and the higher animals, but is confined rather to the earliest stages of development, and particularly to the mode of formation of the egg and the male reproductive elements, subjects now occupying very closely the attention of observers in the different countries of Europe, while unfortunately our own land does not contain in its population of 50,000,000, so far as we are aware, a single person who is studying the points regarding early vertebrate development in an original way. Should there be any one desirous of examining into the subject, he would find the volume before us, although a little *passé* in some points recently worked out by E. Van Beneden, McLeod, Balfour, and probably several biologists in Germany, still as useful and certainly as readable an introduction as he could desire. Balbiani has contributed additions to our knowledge of reproduction in the Arthropods and in the Vertebrates, and considerable new matter, illustrated with six chromo-lithograph plates, is given in the present volume.

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[1] *Leçons sur la Génération des Vertébrés.* Par G. BALBIANI. Recueillies par le DR. F. HENNEGUY, Revues par le Professeur. Avec 150 figures intercalées dans le texte et 6 planches en chromo-lithographie hors texte. Paris, O. Doin, 1879.

ZITTEL'S HAND-BOOK OF PALÆONTOLOGY.—We have previously noticed this valuable hand-book, which is being issued in parts, the present one being the fourth of Vol. I. This completes the first division of the present volume, which treats of fossil Protozoa, Cœlenterata, Echinodermata and Molluscoidea. The present part finishes the subject of fossil worms, but is mainly devoted to the Molluscoidea, namely the Bryozoa and Brachiopoda, which are placed under the Mollusca. It will thus be seen, that the classification so far from being modern, borders upon the paleozoic. Still the matter under each class heading is detailed, accurate; the fossils are interpreted by reference to the living forms, of which a concise description is given, and, as we have before said, this work of Zittel's, is on the whole, superior to any that the student can obtain.

MCALPINE'S BIOLOGICAL ATLAS.[1]—The title sufficiently describes this atlas, the plan of which is pretty good, though often the figures are clumsy, and more or less misleading. For example, the figures of the anatomy of the lobster are coarse, rough, and convey little idea of the parts as they exist in nature; they look as though they were copied from rough colored-chalk diagrams sketched off-hand on the blackboard. The "zoëa of the lobster" is a rough figure of some decapod zoëa, but not the young freshly hatched lobster, which, as the authors should have known, has a much more advanced form than here represented. The drawings of the nervous system and eye of the same animal are abominable. Indeed, we could scarcely recommend the book for use in our schools and colleges. Something much better could have been prepared for the same money.

EATON'S SYSTEMATIC FERN LIST.—Prof. Eaton, of Yale College, has recently issued a "Systematic Fern List," which will prove useful to our botanists, who wish to know what proportion of our native ferns they have in their collections. The list includes all the known ferns of the United States, and gives the geographical range of every species, and is intended "to serve as a check-list, and at the same time to show the classification of the genera." Of the one hundred and fifty-one species enumerated, one hundred and forty are true ferns (order Filices), the remaining eleven be-

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[1] *Biological Atlas.* A guide to the practical study of plants and animals, adapted to the requirements of the London University, Sciences and Arts Department, and for use in schools and colleges, with accompanying text, containing arrangement and explanation, equivalent terms, glossary and classification. 423 colored figures and diagrams. By D. and A. N. MCALPINE. Edinburgh and London, W. and A. K. Johnston, 1880. 4to, pp. 49.